Darr, Robert

From: LeRoy Moore [redacted]
Sent: Thursday, September 14, 2006 3:22 PM
To: Darr, Robert
Cc: [redacted]
Subject: Comments on "Proposed Plan" for Rocky Flats

To: DOE Rocky Flats <c[redacted]>
From: LeRoy Moore
Rocky Mountain Peace and Justice Center
Re: Comments on "Proposed Plan for the Rocky Flats Environmental Technology Site" (July 2006)
http://192.149.55.183/CTSM/pdf/final/Proposed_Plan_FINAL_DOCUMENT.pdf

Thank you for the opportunity to comment on the "Proposed Plan for RFETS." The following comments are selective in that they address only a few points from the document. But by implication these comments are comprehensive because they go to the heart of the key concerns with public health and environmental integrity. They refer first to certain conclusions stated in the text of the Proposed Plan, then comment on the three principal options DOE is considering for Rocky Flats.

On p. 13, the Proposed Plan states:

> The overall conclusions of the Ecological Risk Assessment indicate that site conditions due to residual contamination do not represent significant risk of adverse ecological effects to receptors from exposure to site-related residual contamination.

We strongly disagree with this assessment for two reasons. It seems to assume that near-term conditions at the site will remain unchanged, including both physical conditions and institutional or governmental systems or mechanisms of control. In the long term related to the 24,400-year half-life of plutonium-239 it is impossible to predict future physical conditions, and it is folly to assume that current governmental or institutional entities and systems of control will endure for anything like the period of potential harm resulting from residual contamination at the site. Second, entirely too little is known about genetic effects of radiological exposure to draw the conclusion that there is no significant risk of adverse effects either in the short term or the long term. Genetic specialist Dietard Tautz asserts that it may take several generations for the effects of radiation exposure to be readily apparent in some species, by which time the damage may be irreversible. He calls this a "genetic uncertainty principle" (*Trends in Genetics*, vol. 16, no. 11, Nov. 2000, p. 475). His work suggests the possibility of unexpected adverse effects from residual contamination on wildlife at Rocky Flats, effects that over time could extend both beyond the bounds of the site and to other organisms.

On p. 16 DOE states as one of its key conclusions:

> Air emissions present no health or environmental concerns at present and anticipated future levels. Air, therefore, was not evaluated in the Feasibility Study.

DOE here effectively fails to consider the most important pathway by which minuscule particles of plutonium can be taken into the body of humans, namely, via inhalation. For as long as any particle remains lodged in the body, it continues to bombard surrounding tissue with radiation. Because of its long half-life, prudence dictates that we assume that any plutonium-239 left in the environment is likely some day to surface and be resuspended as airborne particles. Particles of 10 micrograms (10/millionths of a gram) or smaller may be inhaled. As early as 1945 the government recognized that the tolerance level for plutonium in the body of workers was one microgram (DOE, *Closing the Circle on the Splitting of the Atom* {1995], p. 38); a standard text in this field calls a single microgram "a potentially lethal dose" (Cotton and Wilkinson, *Advanced Inorganic Chemistry* [1966], p. 1102). Research on Rocky Flats workers with internal plutonium deposits as low as 5% of DOE's purportedly safe permissible lifetime body burden developed a variety of cancers in excess of what was normal for workers who had not been exposed (Wilkinson, *American Journal of Epidemiology*, vol. 125, no. 2, 1987, pp. 231-250). Interestingly, DOE's data on plutonium particles remains classified. In 2004 the British Committee Examining Radiation Risks of Internal Emitters concluded that cancer risk from very low doses of plutonium may be ten or more times more dangerous than allowed for by existing exposure standards (www.cerrie.org). There is no guarantee that the standards for permissible exposure on which DOE and the regulators rely for cleanup and closure of Rocky Flats adequately protect the most vulnerable members of the population who are likely in the future to venture onto the Rocky Flats site (see the discussion of risk and alpha emitters in my "Rocky Flats: The Bait and Switch Cleanup," *Bulletin of the Atomic Scientists*, Jan./Feb. 2005, pp. 54-56 [http://www.rmpjc.org/2005/Rocky Flats/AtomicScientists/]).

Another key conclusion from p. 16:

> Because the Remedial Investigation concluded that the Peripheral OU poses no current or potential future threat to human health or the environment, a Feasibility Study for this OU was not required and no remedial alternatives were evaluated. DOE is proposing that no remedial action be taken in the Peripheral OU.

This conclusion is highly dubious for the simple reason that the site, especially the "peripheral" buffer zone, was never adequately characterized. Though many samples were collected in this large area, many of them were done by the kriging method by which samples in very large plots were composited to produce average readings, a method that is likely to miss or to average away hot spots.

DOE's proposed alternatives:

Of the three alternatives DOE says it will consider it prefers Alternative 2, which entails the implementation of institutional and physical controls. The foregoing comments already indicate that we find this approach wholly inadequate both for the near term and especially for the long term. We need say no more.

Alternative 3, "Targeted Surface Soil Removal," by means of which the top 6 inches of soil would be cleaned to a plutonium concentration of 9.8 picocuries per gram, is hardly better. In commenting on the final draft Rocky Flats Cleanup Agreement we at the Rocky Mountain Peace and Justice Center recommended that the Rocky Flats site be cleaned to a level of 10 or less picocuries of plutonium per gram of soil without respect to depth. RFCA as finally revised and implemented allows up to 50 picocuries per gram of soil in the top three feet and much higher concentrations at deeper levels. DOE's Alternative 3 would be an improvement but would

1/4 9/14/2006

still leave high quantities of plutonium behind. Because, as stated above, any plutonium remaining in the place may some day surface and be resuspended, DOE's Alternative 3, while not as problematic as Alternative 2, is also totally unsatisfactory.

Community acceptance:
Finally, on p. 24 DOE says it will consider "community acceptance" in deciding which of its proposed alternatives to adopt. But DOE has already effectively shut out the pubic. In 1995 the broadly representative Rocky Flats Future Site Use Working Group recommended by consensus that Rocky Flats be cleaned to average background levels as soon as it is technologically and fiscally possible to do this in an environmental responsible manner. The Citizens Advisory Board, the Local Impacts Initiative and other groups and individuals quickly adopted this proposal, making it the single most widely supported cleanup recommendation for Rocky Flats. Yet DOE and the regulators rejected it in favor of the Rocky Flats Cleanup Agreement as officially adopted in 1996 and modified in 2003, a plan rejected by 86% of the parties from the public that commented on it (see attachment). DOE has proceeded with a cleanup that enjoys very scant public support. Having done what many in the public regard as an inadequate cleanup, DOE now wants the public to say "yes" to an inadequate closure plan.

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ENGAGED PUBLIC OVERWHELMINGLY REJECTS
THE ROCKY FLATS CLEANUP AGREEMENT
by LeRoy Moore, Ph.D.
Rocky Mountain Peace and Justice Center (November 2005)

Background:
In 1996 the DOE and the regulators (EPA and CDPHE) adopted the Rocky Flats Cleanup Agreement (RFCA) establishing legally binding standards for cleanup of the Rocky Flats site. In November 2002 these agencies released for public comment a draft of proposed revisions to the RFCA. The deadline for receipt of comments was January 31, 2002. On June 9, 2003, the agencies issued the final RFCA, a document modified only slightly from what had been proposed the previous November. Along with the text of the changed RFCA the agencies included a "Response to Comments" section that lists all parties that commented on the proposed RFCA revisions, records their comments, and gives responses made by the government agencies. What follows is an analysis of the comments from the public.

Number of parties that submitted comments:
In a June 9, 2003, cover letter to members of the community the government agencies state that "95 sets of individual or organization comments were received." But their own attached index of those who commented shows that the number of comments received was somewhat larger. While the index lists comments numbered from 1 through 95, its number 5 is subdivided alphabetically into comments 5A through 5U, for a total of 21 comments (these comments are lumped together because they were all recorded on December 17, 2002, at the sole public meeting set up to receive comments). This brings the total number of comments to 95 + 20 or 115 comments received.

Two other adjustments must be made to this total number. First, duplications must be eliminated, so that any party that submitted multiple comments gets counted only once. Here are names and index numbers for parties that appear multiple times in the index:

- Rocky Flats Coalition of Local Governments: 1, 4, 5C
- Rocky Mountain Peace & Justice Center: 2, 5B, 5K, 5U, 61
- Rocky Flats Citizens Advisory Board: 5A, 30
- City of Westminster: 5H, 7, 47
- City of Arvada: 5M, 49, 62
- Rick Warner: 5Q, 86

The 18 index entries listed came from 6 parties and thus are here counted as only 6 separate comments. The other needed adjustment is to eliminate index items 55 and 95 because no text corresponding to these numbers is recorded in the printout of comments.

Here is a tabulation of the number of parties commenting:

95 entries in index
+ 20 additional parties listed under index #5
115
- 12 duplications
103
- 2 entries for which no comment is recorded
101 total number of parties for whom comments exist

Levels of rejection and support for the proposed RFCA:
The comments submitted by the aforementioned 101 parties divide readily into two principal groups: those who accept the draft RFCA (while perhaps seeking some modification to it), and those who reject it (while perhaps recommending modifications if the agencies go with what they have proposed). Here are the numbers for each:

a) Accepting the proposed RFCA: 14 parties (13.9% of total)
b) Rejecting the proposed RFCA: 87 parties (86.1% of total)

The overwhelming majority of commenters rejected the proposed RFCA. Neither the City of Boulder nor Boulder County approved the proposed RFCA, but because they are not included in the index of comments received they are not included in the above calculation.

As noted earlier, in June 2003 the agencies adopted what they had proposed as the final cleanup plan for Rocky Flats. In October 2005 Kaiser-Hill announced completion of the cleanup according to this plan.

Some of the reasons given for rejecting the cleanup plan:

- Rocky Flats will be left harmfully contaminated if the RFCA proposals are adopted.
- Clean Rocky Flats to the maximum extent now possible.
- Clean to protect the family of a resident subsistence farmer.
- Make the polluters pay, not the taxpayers.
- Do not add to the burden of background radiation already present in this area.
- Plutonium in soil should be cleaned to 5 or less picocuries per gram (pCi/g), with subsurface cleanup determined by the depth of contamination. This would make the site safer for all users.
- Ultimate cleanup should be to background (0.04 pCi/g).
- Rocky Flats will not remain a wildlife refuge for the eons plutonium left in the environment remains hazardous.
- If the more stringent requirements of 5 pCi/g or less are ignored, the site should remain off limits to the public, especially children.
- If the RFCA parties proceed with the partial cleanup they propose, they should work with the affected public to establish a plan to research technology needed for better site cleanup as well as to get funding for all long-term stewardship costs, including contingencies.
- The current plan calls for inadequate cleanup, in order to save money and hasten our forgetting of the contamination resting there.
- We need to protect not a wildlife refuge worker who will spend 2000 hours a year on the site for the period of employment there but a resident rancher who is going to spend 8500 hours a year on the site for a lifetime. No one has any idea what that land is going to be used for hundreds and thousands of years from now.
- Scrap this plan and go back to the drawing board. Use a lower soil action level based on the resident rancher scenario. Employ citizen power to go to Congress to obtain funding necessary for a cleanup that protects the health of both present and future generations.
- Neither the DOE nor other Rocky Flats officials have bothered to even ask Congress for more funds to get a better cleanup.
- In situations of uncertainty, we should follow the precautionary principle, which says we act conservatively and put the public's health over purely economic considerations.
- The proposed modifications to the RFCA do not provide adequate assurance that the danger at Rocky Flats will end any time soon.